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# NiceZyme View of ENZYME: EC 5.5.1.4

## Official Name

**Inositol-3-phosphate synthase.**

## Alternative Name(s)

**D-glucose 6-phosphate cycloaldolase.**

**Glucocycloaldolase.**

**Glucose 6-phosphate cyclase.**

**Inositol 1-phosphate synthetase.**

**Myo-inositol-1-phosphate synthase.**

## Reaction catalysed

D-glucose 6-phosphate <=> 1D-myo-inositol 3-phosphate

## Cofactor(s)

NAD.

## Comment(s)

The NAD(+) dehydrogenates the -CHOH- group to -CO- at C-5 of the glucose 6-phosphate, making C-6 into an active methylene, able to condense with the -CHO at C-1; finally, the enzyme-bound NADH reconverts C-5 into the -CHOH- form.

## Cross-references

Biochemical

Pathways; map number(s)     [A3](#)

BRENDA     [5.5.1.4](#)

PUMA2     [5.5.1.4](#)

PRIAM enzyme-specific profiles     [5.5.1.4](#)

Kyoto University LIGAND chemical database     [5.5.1.4](#)

IUBMB Enzyme Nomenclature     [5.5.1.4](#)

IntEnz     [5.5.1.4](#)

MEDLINE     [Find literature relating to 5.5.1.4](#)

[P42801](#), INO1\_ARATH;     [Q96348](#), INO1\_BRANA;     [P42800](#), INO1\_CANAL;